

REMARKS/ARGUMENTS

Prior to entry of the instant amendment, claims 1-66 are pending in the subject application.

By the instant amendment, claims 1, 3, 10 and 12 are amended, claims 20-66 are canceled, and claims 67-71 are added. No new matter is added. Applicants respectfully request entry of this amendment.

Applicants appreciate the Examiner's consideration of the Information Disclosure Statements filed on June 21, 2004 and March 3, 2005.

Applicants also appreciate the Examiner's acknowledgement of applicants' claim for foreign priority and receipt of a certified copy of the priority document.

Applicants also appreciate the Examiner's indication of the acceptability of the drawings filed on December 31, 2003.

Claims 1, 10 and 69 are independent. Claims 1-19 and 67-71 are presented to the Examiner for further or initial prosecution on the merits.

A. Introduction

In the outstanding Office action, mailed April 29, 2005, the Examiner rejected claims 3, 5, 12 and 14 under 35 U.S.C. § 112, second paragraph, rejected claims 1, 4-8, 10, 13-17 and 19 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent Application Publication No. 2001/0017372 A1 to Koyama (hereinafter "the Koyama reference"), rejected claims 2 and 11 under 35 U.S.C. § 103(a) as being unpatentable over the Koyama reference, and rejected claims 9 and 18 under 35 U.S.C. § 103(a) as being unpatentable over the Koyama reference in view of U.S. Patent Application Publication No. 2002/0097362 A1 to Yamada et al. (hereinafter "the Yamada et al. reference").

B. Asserted Rejection Under 35 U.S.C. § 112, Second Paragraph

In the outstanding Office action, the Examiner rejected claims 3, 5, 12 and 14 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention.

Applicants respectfully submit that the instant amendments to claims 3 and 12 overcome the rejection of claims 3 and 12 for at least the reasons set forth below, and respectfully traverse the rejection of claims 5 and 14.

Regarding claims 3 and 12, the Examiner asserted that “it is not understood what type of hardness is claimed.” *Office action of April 29, 2005, at page 2.* By the instant amendment, claims 3 and 12 are amended to recite that the hardness is measured on the Brinell scale.

Regarding claims 5 and 14, the Examiner asserted that “it is not understood how ‘the protective cap is formed on an upper surface of the semiconductor chip and *between* the semiconductor chip and the flexible substrate’ is obtained since in figure 2 of the instant application, it appears the protective cap is formed on an upper surface of the semiconductor *but not* between the semiconductor chip and the flexible substrate.” *Office action of April 29, 2005, at pages 2-3.* Applicants respectfully submit that the application as originally filed discloses a protective cap between a semiconductor chip and a flexible substrate. See, e.g., feature 93a in FIGS. 4 and 5A, and the specification at, e.g., paragraph [0067]. Accordingly, applicants respectfully submit that claims 5 and 14 are not indefinite, and respectfully request that this rejection be reconsidered and withdrawn.

C. Asserted Anticipation Rejection

In the outstanding Office action, the Examiner rejected claims 1, 4-8, 10, 13-17 and 19 under 35 U.S.C. § 102(e) as being anticipated by the Koyama reference. Applicants

respectfully submit that the Koyama reference fails to disclose or suggest all elements of the rejected claims for at least the reasons set forth below.

By the instant amendment, claim 1 is amended to recite, in part, “an insulating region, which is formed on the protective cap.” This aspect of the present invention is clearly illustrated in, e.g., FIG. 2 of the subject application, and similarly described in paragraph [0050] of the specification. In particular, applicants note that an insulating layer 65 is formed on the protective cap 63.

In the outstanding Office action, the Examiner asserted that the Koyama reference discloses “a protective cap 518 (para [0072], lines 4-7), which seals the semiconductor chip.” *Office action mailed April 29, 2005, at page 3, with reference to FIG. 5 of the Koyama reference.* Applicants respectfully disagree, and submit that feature 518 is an insulating layer, not a protective cap, and is formed for insulation rather than for improving durability against external stress.

Furthermore, as noted above, claim 1 is amended to more particularly recite an insulating region, which is formed on the protective cap. Applicants respectfully submit that the Koyama reference fails to disclose or suggest this element of claim 1. The Examiner asserted that feature 518 of the Koyama reference constitutes a protective cap, but the Koyama reference fails to disclose an insulating layer on the protective cap, as presently recited in claim 1. Accordingly, applicants respectfully submit that the Koyama reference fails to disclose, or even suggest, each and every element of claim 1.

By the instant amendment, claim 10 has been amended in similar fashion to claim 1. Thus, the remaining rejected claims either recite similar features to those recited in claim 1, depend from claim 1, or depend from claim 10. Accordingly, claims 1, 4-8, 10, 13-17 and 19 are believed to be allowable. Therefore, applicants respectfully request that the

Examiner reconsider and withdraw the rejection of these claims and provide an indication of allowance.

D. Asserted Obviousness Rejections

In the outstanding Office action, the Examiner rejected claims 2 and 11 under 35 U.S.C. § 103(a) as being unpatentable over the Koyama reference, and rejected claims 9 and 18 under 35 U.S.C. § 103(a) as being unpatentable over the Koyama reference in view of the Yamada et al. reference. The rejected claims depend from claims 1 and 10 and are believed to be allowable for at least the reasons set forth above regarding claims 1 and 10. Further, applicants respectfully submit that the Koyama reference fails to suggest, much less disclose, each and every element of claims 2 and 11 for at least the reasons set forth below.

In the outstanding Office action, the Examiner admitted that the Koyama reference does not disclose a protective cap having a tensile strength of greater than about 30 GPa. *Office action of April 29, 2005, at page 5.* The Examiner asserted, however, that it would have been obvious to one of ordinary skill in the art to modify the Koyama reference “by having the tensile strength of the protective cap being greater than about 30 GPa for the purpose of providing a better protection of a semiconductor device.” *Office action of April 29, 2005, at pages 5-6.* Applicants respectfully disagree, and submit that the Examiner is engaging in impermissible hindsight reconstruction of the claimed invention. In particular, absent the teachings of the instant application, applicants submit that one of ordinary skill in the art would not be motivated to extend the Koyama reference in the manner suggested by the Examiner.

In rejecting claim 2, the Examiner quoted MPEP § 2144.05 (*Obviousness of Ranges: Optimization of Ranges*), stating “where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the

art” and citing *In re Aller*. *Office action of April 29, 2005, at pages 5-6*. Applicants respectfully submit that the Examiner failed to set forth a *prima facie* case of obviousness for at least the reason that the Examiner failed to meet the requirements set forth in MPEP § 2144.05.

Applicants note that MPEP § 2144.05 (II) (B) requires that “a particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result. . . .” Applicants respectfully submit that the Examiner failed to meet this requirement. In rejecting the pending claims, the Examiner asserted that element 518 in the Koyama reference constitutes a “protective cap.” Assuming, *arguendo*, that this assertion is correct, the Koyama reference nonetheless fails to disclose or suggest modifying the tensile strength of element 518. Indeed, the Koyama reference is silent as to the tensile strength of any aspect of the devices disclosed therein. Thus, one of ordinary skill in the art, when presented with the Koyama reference at the time the present invention was made, would not recognize the tensile strength of element 518 to be a result-effective variable.

In particular, the Koyama reference refers to element 518 as an “interlayer insulating film” [0072] and a “planarization film.” *See, e.g., paragraphs [0072] and [0175] of the Koyama reference*. The devices disclosed in the Koyama reference rely on the interlayer insulating film 518 to electrically insulate various conductive elements, or to provide a planar surface for features formed thereon, not to provide physical protection for the devices as a whole. The Koyama reference does not suggest modifying the strength of element 518, nor in any way does it suggest that the tensile strength of element 518 is important. Accordingly, contrary to the Examiner’s assertion, one of ordinary skill in the art, absent the teachings of the subject application, would not be motivated to adjust or optimize the tensile strength of element 518. Thus, the requirements of MPEP § 2144.05 (II) (B) have not been

met, and *In re Aller* is not applicable. Therefore, applicants respectfully request that the Examiner reconsider and withdraw the rejection of these claims and provide an indication of allowance.

E. New Claims

By the instant amendment, claims 67-71 are added. Claims 67-68 depend from claim 1, and applicants submit that they are allowable for at least the reasons set forth above regarding claim 1. Claim 69 is independent, and claims 70-71 depend from claim 69. Claims 69-71 recite additional aspects of the present invention and are believed to be allowable. Support for these claims can be found in the specification and figures as originally filed. For example, support for claim 69 can be found in, e.g., FIG. 5A and the associated disclosure on page 12 of the specification. Entry and examination of these claims is respectfully requested.

F. Conclusion

Since the cited prior art relied on to reject the claims of the subject application fails to anticipate or render obvious the present invention as recited in claims 1-19 and 67-71, applicants respectfully submit that these claims are now in condition for allowance, and a notice to that effect is respectfully requested.

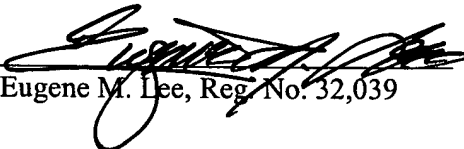
If the Examiner believes that additional discussions or information might advance the prosecution of the instant application, the Examiner is invited to contact the undersigned at the telephone number listed below to expedite resolution of any outstanding issues.

In view of the foregoing remarks, reconsideration of this application is earnestly solicited, and an early and favorable further action upon all pending claims is hereby requested.

Respectfully submitted,

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Date: July 29, 2005


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PETITION and
DEPOSIT ACCOUNT CHARGE AUTHORIZATION

This document and any concurrently filed papers are believed to be timely. Should any extension of the term be required, applicant hereby petitions the Director for such extension and requests that any applicable petition fee be charged to Deposit Account No. 50-1645.

If fee payment is enclosed, this amount is believed to be correct. However, the Director is hereby authorized to charge any deficiency or credit any overpayment to Deposit Account No. 50-1645.

Any additional fee(s) necessary to effect the proper and timely filing of the accompanying-papers may also be charged to Deposit Account No. 50-1645.